Sprint
Together with NEXTEL

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BY ELECTRONIC FILING

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
The Portals
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: Docket Nos. 02-364, 00-258
*Written Ex Parte Presentation*

Dear Ms. Dortch:

Applying some type of power limit to future ISM devices in the 2496-2500 MHz band will greatly improve the prospects for the delivery of wireless broadband services to American consumers. Rather than grant foreign and domestic microwave oven manufacturers a perpetual right to operate with unlimited power in the 2496-2500 MHz band, the Commission should improve the ability of BRS-1 licensees to deliver broadband service to all Americans, including those in rural areas of the country that wired alternatives cannot or do not serve.

Sprint Nextel has proposed applying generous Part 18 emissions limits to future ISM devices in the uppermost four megahertz of the 100-megahertz ISM allocation. In stubbornly opposing any Commission power limit on future MWO emissions other than what the human body can physically tolerate, the Association of Home Appliance Manufacturers (AHAM) has repeatedly claimed that "no problem" exists between low-power mobile broadband services such as BRS-1 and ISM devices.[1]

AHAM, however, has failed to read its own filings to the Commission. In 1999, AHAM told the Commission that **"[t]he widespread use of ISM devices makes the [2400-2500 MHz band] a very difficult band in which to operate and may be particularly difficult for relatively low-power mobile services covering large areas."**[2] BRS is, of course, precisely

[1] Letter from David B. Calabrese, Vice President, Government Relations, Association of Home Appliance Manufacturers, to Marlene Dortch, Secretary, Federal Communications Commission, Docket Nos. 02-364, 00-258 (Sept. 27, 2005) (*AHAM Sept. 27 Ex Parte*).

[2] Comments of the Association of Home Appliance Manufacturers, ET Docket 99-231 (Oct. 5, 1999), *available at* <http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6009551835>. AHAM made its comments in opposition to the introduction of unlicensed frequency-hopping, spread-spectrum transmitters that were to share the ISM band by using a minimum of 15 hopping channels over 75 MHz of spectrum. While the Commission allowed the introduction of these unlicensed devices over AHAM's objection, it explained that the new unlicensed devices would operate without the benefit of the interference protection that the Commission grants licensed communications devices. *See Amendment of Part 15 of the Commission's Rules Regarding Spread Spectrum Devices,* First Report and Order, ET Docket No. 99-231 (rel. Aug. 31, 2000), *available at* <http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-00-312A1.doc>. As a licensed service, BRS must receive the types of protections against interference that were denied to the frequency-hopping, spread-spectrum transmitters at issue in ET Docket 99-231.

the type of "low-power mobile service covering large areas" that AHAM said would represent a **"particularly difficult"** service to operate on a co-channel basis with MWOs.

AHAM does not offer an explanation for its dramatic about face in this proceeding because none exists. No changes in technology have emerged that would render AHAM's prior representations to the Commission in any way inapplicable. Indeed, as AHAM itself has noted, many of the same microwaves that were present in the market in 1999 continue to be present in the market today. Moreover, advances in wireless broadband since 1999 tend to make wireless broadband equipment **more – not less – sensitive** to the types of increases in the noise floor that ISM devices with unlimited power produce.

Despite AHAM's prior conclusion that a problem would, in fact, exist if MWOs and low-power services were required to operate on a co-channel basis, AHAM has resisted any suggestion that **the Commission should limit the power of future ISM devices to something less than the maximum that the human body can physically tolerate, which is the only limit today**.[3] To support this demand, AHAM has raised a number of irrelevant or misleading challenges to the data and arguments that Sprint Nextel Corporation and other parties have submitted in this proceeding. A few of the most misleading statements are addressed below.

- AHAM tries to attach some importance to the use of "peak, as opposed to average, emissions" in the data that parties have presented in this proceeding.[4] As AHAM knows, however, the differences between peak and average values in this context are so small as to be meaningless. Indeed, AHAM itself has presented average measurements in this docket.[5] Converting from peak to average power does not result in any non-compliant microwaves becoming compliant or vice versa. AHAM raises a distinction without a difference for no obvious purpose other than to confuse and dissemble.

- AHAM claims that Sprint "includes a test that does not exist" – an FDA test at three meters.[6] Sprint performed a simple conversion to express the existing FDA limits in dBm (rather than microvolts per meter) from a common measuring distance of three meters. The headings in the charts that Sprint presented to the Commission on September 20, 2005 are clearly labeled as "conversions" of existing test data, not a newly invented test. Just as AHAM has done elsewhere in the proceeding[7], the conversion that Sprint performed simply provided an "apples-to-apples" comparison for the different measuring units used in different portions of the rules. AHAM's expression of "puzzlement" at Sprint's use of common measuring units – particularly when AHAM itself used the same conversion mechanism – defies explanation.

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[3] Despite AHAM's claims, Sprint Nextel have never challenged the practical need to permit existing MWOs to continue to operate on a grandfathered basis as well as the necessity of allowing some reasonable time period to deplete existing inventories of equipment. For future MWOs and other ISM devices yet to be developed, however, establishing some type of power limit will permit shared use of the band between BRS licensees and ISM devices. In other words, the time to begin setting standards for this shared spectrum at 2496-2500 MHz is now – before the problem becomes acute for millions of new wireless broadband subscribers.

[4] *AHAM Sept. 27 Ex Parte* at 4 n.7.

[5] *See* Replies of the Association of Home Appliance Manufacturers, Docket Nos. 02-364, 00-258 at 7 (Nov. 8, 2004) (AHAM Reply), *available at* <http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516793506>.

[6] *AHAM Sept. 27 Ex Parte* at 4 n.7.

[7] *See, e.g.,* AHAM Reply at 8 ("The FDA's average in-band limit of 1 mW/cm2 converts to a limit of approximately 120 dBuV/m (average) at 3 meters.")

- AHAM claims that Sprint offers no explanation of how it arrives at the emission limit value for ovens with power greater than 500 watts.[8] Section 18.305 offers a complete explanation. Section 18.305 of the Commission's rules provides for more stringent emissions limits as ISM device power increases.[9] By suggesting that Sprint used the values applicable to arc welding and similar equipment, AHAM appears to have ignored footnote one of Section 18.305 of the Commission's rules. Footnote one states that for any type of ISM device unless otherwise stated "Field strength may not exceed 10 µV/m at 1600 meters." Since no specific provision applies to microwave ovens, they are subject to this limit. Thus, Sprint used the proper field strength measurement value in its filings with the Commission.

In short, even AHAM has recognized that low-power wireless broadband communications systems in the 2496-2500 MHz band are incompatible with the complete absence of any power limit for ISM emissions beyond what the human body can physically tolerate. AHAM's more recent claims to the contrary are false and misleading. Applying the Part 18 limits to four megahertz of the ISM devices' 100-megahertz allocation represents a reasonable solution that will permit the widespread deployment of next-generation broadband to consumers using BRS Channel 1. Under section 1.1206(b) of the Commission's rules, 47 C.F.R. § 1.1206(b), please associate this letter with the above-referenced docket.

Sincerely,

/s/ Trey Hanbury

Trey Hanbury
Director, Sprint Nextel Corporation

CC: Fred Campbell
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[8] *Id.*
[9] 47 C.F.R. § 18.305(b) n.1.